

Case 2878

Scarabaeus rufus Moll, 1782 (currently *Aphodius rufus*), *Scarabaeus rufus* Fabricius, 1792 (currently *Aegialia rufa*) and *Scarabaeus foetidus* Herbst, 1783 (currently *Aphodius foetidus*) (Insecta, Coleoptera): proposed conservation of usage of the specific names

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Abstract. The purpose of this application is to conserve the specific names of the scarab beetles *Scarabaeus rufus* Moll, 1782 and *S. rufus* Fabricius, 1792, which are junior primary homonyms of *S. rufus* De Geer, 1778. Despite their homonymy all three specific names have been used since publication and are currently in use; they have not been considered congeneric for 150 years. It is proposed that the name *S. scybalarius* Fabricius, 1781, a senior subjective synonym of *S. rufus* Moll which, through misidentification, has been used for the taxon correctly called *S. foetidus* Herbst, 1783, should be suppressed. *Dischista rufa* (De Geer) is a well known and widely distributed African species of the subfamily CETONIINAE. The larvae have been found in rhinoceros dung; the adults never feed on dung but on fruit and flowers and are a common pest in beehives. A lectotype is designated. *Aphodius (Agrilinus) rufus* (Moll) and *Aphodius (Aphodius) foetidus* Herbst (subfamily APHODIINAE) are European species, frequently found in mammal dung. *Aegialia rufa* (Fabricius, 1792) (subfamily AEGIALIINAE or APHODIINAE, tribe AEGIALIINI) is also European and has been introduced into the U.S.A. and Canada; it is psammobiontic and littoral, mostly found in plant debris.

1. De Geer (1778, pp. 640, 946, pl. 48, fig. 1) described and figured *Scarabaeus rufus*. The species was transferred to *Cetonia* Fabricius, 1775 by Schönherr (1817, p. 124) and has been cited under five further generic names; it has lately been placed (see Holm & Marais, 1992, p. 224) in *Dischista* Burmeister, 1842 (MELOLONTIIDAE, CETONIINAE or SCARABAEIDAE, CETONIINAE). The species has been treated as valid since Kraatz's work (1883, p. 27). All authors writing after 1921 have considered De Geer's name to be a senior synonym of *Cetonia carmelita* Fabricius, 1787, *Pachnoda carbonaria* Gory & Percheron, 1833 and *P. frenata* Burmeister, 1847. Holm & Marais

(1992, p. 224) recorded that type material of *S. rufus* had not been traced. However, two specimens have been found in the De Geer collection in the Naturhistoriska Riksmuseet, Stockholm, and one of us (E. Holm) hereby designates one of these as the lectotype. It is a male bearing the labels:

- (1) (square orange label without writing);
- (2) 'Types *Scarabaeus rufus* de Geer' (white elongate modern label, handwriting of P. Lindskog);
- (3) 'Lectotype, *Scarabaeus rufus* de Geer, des. E. Holm' (white label with red margin and printing).

The second (paralectotype) specimen is female and labelled:

- (1) 'Sp.' (square antiquated white label with quill writing);
- (2) 'Paralectotype, *Scarabaeus rufus* de Geer, des. E. Holm 1993' (white label with red margin and printing).

The usage of *rufus* De Geer has never been challenged.

2. Fabricius (1781, p. 16) described *Scarabaeus scybalarius*. Illiger (1798, p. 33) included the species in his new genus *Aphodius* (p. 15) (SCARABAEIDAE, APHODIINAE) where it has remained. The lectotype, designated by Landin (1956, p. 214), is in the Banks Collection in the Natural History Museum, London. Moll (1782, p. 372) described the same taxon as *Scarabaeus rufus* and Creutzer (1799, p. 51) placed this in *Aphodius*. No types for Moll's nominal species are known (see M. Dellacasa, 1988, p. 192). Authors in nearly all fundamental works on the systematics of the SCARABAEIDAE in the 19th and 20th centuries have used the name *A. rufus* (Moll) and not *scybalarius* Fabricius, and have erroneously used '*Aphodius scybalarius* (Fabricius)' for Herbst's (1783, p. 7, pl. 19, fig. 6) species *Scarabaeus foetidus*.

3. The synonymy between the names *Scarabaeus scybalarius* Fabricius and *S. rufus* Moll was pointed out by Landin (1956) on the basis of a study of Fabricius's type material in the Zoological Museum, Kiel and the Natural History Museum, London (Banks Collection). Landin (1956, pp. 213, 225) proposed that *foetidus* should be re-instated in place of *scybalarius* auctt. (nec Fabricius, 1781) as the correct specific name for the taxon, but that the usage of *rufus* Moll should be conserved for the species which Fabricius had called *scybalarius*. Landin (1956, p. 213) commented: 'The priority belongs to Fabricius' specific name *scybalarius* (1781) before *rufus* Moll (1782). Here an application of the rule of priority would consequently mean that the name of *scybalarius* would be transferred from one common species to another quite as widespread one, and that the name of *rufus*, which has been used for a long time, would altogether disappear in the synonymy, which is already difficult to survey, and I am quite convinced that such a measure would never come to be commonly applied'. Landin realised that *Scarabaeus rufus* Moll was a junior primary homonym and (1957a, pp. 110–111) noted: 'De Geer already in 1778 described a *Scarabaeus rufus*, belonging to another subfamily and taken from '*Scarabaeus*' long before the homonymy was discovered ... In my opinion, to reject the name of *rufus* Moll, which has been used in the practical treatments of the species for such a long time, is not to take a realistic view of the nomenclatorial problems. As a matter of fact ... the species should be called *Aphodius scybalarius* (Fabricius, 1781), a name which has always been wrongly used for quite another species. The confusion would thus be even more augmented. As it is quite clear that any change of the name *Aphodius rufus* (Moll)

must involve great nomenclatorial chaos, I propose the preservation of the name'. However, Landin did not submit an application to the Commission.

4. The name *Aphodius rufus* (Moll) has been used in the publications of Endrödi (1956, pp. 51, 179), Panin (1957, p. 186), Landin (1957b, p. 94), Klefbeck & Sjöberg (1960, p. 176), Janssens (1960, pp. 173–174), Balthasar (1964, pp. 402, 405), Baguena Corella (1967, p. 134), Machatschke (1969, pp. 325–326), Stebnicka (1976, pp. 21, 115, 419, figs. 433, 434), Pope (1977, p. 45) and Jessop (1986, pp. 23, 25). Introduction of *A. scybalarius* as the name for the taxon would inevitably lead to confusion for all who use these standard works, particularly as the name has been mostly used in a different sense (paras. 2, 3 and 6), and unfortunately this has sometimes occurred. Silfverberg (1977, p. 91; 1979, p. 32; 1992, p. 38), G. Dellacasa (1983, p. 149), Lundberg & Gustafsson (1986), Martin Piera, Veiga & Lobo (1986, p. 109), Nikolaev (1987, pp. 101, 111), M. Dellacasa (1988, p. 366), Angelini (1991, p. 223), Gangloff (1991, p. 41), Lobo (1992, p. 19) and Baraud (1992, p. 134) adopted the name *A. scybalarius* for this taxon although, in addition to Landin (1956, 1957a), Lumaret (1990, p. 262), Krell (1992, p. 282; 1993, p. 124) and Krell & Fery (1992, p. 232) explicitly opposed its use. The name *scybalarius* has thus been used in two different senses in recent years (see also para. 6).

5. Fabricius (1801, p. 74) introduced the name *Aphodius rufescens* in place of *A. rufus* Moll, 1782; *rufescens* was adopted by Kloet & Hincks (1945, p. 199) but has not been further used. M. Dellacasa (1988, p. 366) recorded nearly 20 further junior synonyms of *rufus* Moll but none has been adopted as valid.

6. *Scarabaeus foetidus* Herbst, 1783 has, since Sturm (1800, p. 30), also been included in *Aphodius*. M. Dellacasa (1988, p. 130) recorded that no type is known. As noted in paras. 2 and 3 above, the taxon was misidentified as *A. scybalarius* Fabricius, 1781 and in the early literature referred to under this name. A few authors (Endrödi, 1956, p. 43; Panin, 1957, p. 175; Janssens, 1960, p. 184; Balthasar, 1964, p. 366; Baguena Corella, 1967, p. 129; Baraud, 1985, p. 183; Lumaret, 1990, p. 238; Tauzin, 1990, p. 163 and Rabil, 1992, p. 81) have continued to use *scybalarius* as the name for the taxon. The majority of recent authors, however, have correctly accepted *foetidus* as the valid name, following Landin (1956, 1957a). These authors include Klefbeck & Sjöberg (1960, p. 174), Machatschke (1969, p. 320), Stebnicka (1976, pp. 111–112, figs. 416, 417), Pope (1977, p. 44), Silfverberg (1979, p. 32; 1992, p. 37), G. Dellacasa (1983, p. 186), Jessop (1986, p. 22), Lundberg & Gustafsson (1986), M. Dellacasa (1988, p. 370) and Krell & Fery (1992, pp. 219, 232).

7. Fabricius (1792, p. 39) described a new taxon under the name *Scarabaeus rufus*. Later he (Fabricius, 1801, p. 82) transferred this to *Aphodius* Illiger. Erichson (1848, p. 918) placed the species under *Aegialia* Latreille, 1807 (p. 96) (SCARABAEIDAE, AEGIALIINAE OR APHODIINAE, AEGIALIINI), where it has since remained. The lectotype, designated by Landin (1956, p. 223), is deposited in the Zoological Museum, University of Copenhagen. *S. rufus* Fabricius, 1792 is the type species of the subgenus *Rhysothorax* Bedel, 1911 (p. 44) by original designation. The name *Aegialia* (*Rhysothorax*) *rufa* (Fabricius) is in current use (see, for example, the recent works of Stebnicka, 1977, pp. 418–420, who cited usage references up to 1976, a small fraction of all citations; Baraud, 1992, p. 106; Krell & Fery, 1992, p. 210). Stebnicka (1977, p. 419) recorded *Aegialia spissipes* LeConte, 1878 (p. 611), based on a specimen from America, where the species had been introduced, as a synonym and noted two

citations of this name (in 1887 and 1931). Silfverberg (1977, p. 91) noted the homonymy between the names *Scarabaeus rufus* De Geer, 1778 and *S. rufus* Fabricius, 1792 and introduced *Aegialia rufina* as a replacement for Fabricius's name. Silfverberg (1979, p. 31; 1992, p. 37) treated his name *rufina* as a junior synonym of *A. spissipes* and adopted the latter name as valid, as did Lundberg & Gustafsson (1986). M. Dellacasa (1988, p. 360) and Gordon (1990, p. 273) used *rufina*. With these few exceptions *Aegialia rufus* (Fabricius, 1792) is in common usage.

8. The names *Dischista rufa* (De Geer, 1778), *Aphodius (Agrilinus) rufus* (Moll, 1782) and *Aegialia (Rhysothorax) rufa* (Fabricius, 1792) are currently in use for well-known and widespread taxa. None of the species has been included in the original genus *Scarabaeus* since 1817, and *rufus* Moll and *rufa* Fabricius have not been considered congeneric since 1848, when Fabricius's species was transferred from *Aphodius* to *Aegialia* (para. 7 above). The three species are placed in different tribes; *D. rufa* is placed in at least a different sub-family and possibly family. To avoid the confusion which would result from upsetting the long-established usage of the names, and in the interest of stability of nomenclature, we propose that the names be conserved. The specific name of *rufa* De Geer has been used unchallenged since 1883. The name *rufus* Moll is a junior primary homonym of De Geer's name but it has had, with few exceptions (see paras. 4 and 5 above), continuous usage since its publication in 1782. The senior subjective synonym *Aphodius scybalarius* (Fabricius, 1781) has been misused for *Aphodius (Aphodius) foetidus* (Herbst, 1783) (see para. 6 above) and its status is therefore ambiguous; to adopt *scybalarius* now for the species commonly called *rufus* Moll would cause considerable and unnecessary confusion. Not all workers would accept the change and, as a result, not only would the name *scybalarius* be used for two distinct taxa but there would be two names simultaneously in use for the taxon commonly called *rufus* Moll. We therefore propose that the name *scybalarius* be suppressed and that *rufus* Moll and *foetidus* Herbst be accepted as valid. The specific name of *rufus* Fabricius, 1792 is a junior primary homonym of *rufus* De Geer and a junior primary (and between 1801 and 1848 a junior secondary) homonym of *rufus* Moll; nevertheless it has had almost unbroken use in Europe. Adoption of *Aegialia spissipes* LeConte, 1878 (based on American material; see para. 7 above) instead of (or, more probably, as well as) the accepted name would cause undue confusion.

9. The International Commission on Zoological Nomenclature is accordingly asked:

(1) to use its plenary powers:

- (a) to suppress the specific name *scybalarius* Fabricius, 1781, as published in the binomen *Scarabaeus scybalarius*, for the purposes of the Principle of Priority but not for those of the Principle of Homonymy;
- (b) to rule that the following specific names are not invalid:
 - (i) *rufus* Moll, 1782, as published in the binomen *Scarabaeus rufus*, by reason of being a junior primary homonym of *Scarabaeus rufus* De Geer, 1778;
 - (ii) *rufus* Fabricius, 1792, as published in the binomen *Scarabaeus rufus*, by reason of being a junior primary homonym of *Scarabaeus rufus* De Geer, 1778 and of *S. rufus* Moll, 1782;

- (2) to place on the Official List of Specific Names in Zoology the following names:
- (a) *rufus* De Geer, 1778, as published in the binomen *Scarabaeus rufus* and as defined by the lectotype designated in para. 1 above;
 - (b) *rufus* Moll, 1782, as published in the binomen *Scarabaeus rufus* (not invalid by reason of being a junior primary homonym of *Scarabaeus rufus* De Geer, 1778);
 - (c) *rufus* Fabricius, 1792, as published in the binomen *Scarabaeus rufus* and as defined by the lectotype designated by Landin (1956) (not invalid by reason of being a junior primary homonym of *Scarabaeus rufus* De Geer, 1778 and of *S. rufus* Moll, 1782);
 - (d) *foetidus* Herbst, 1783, as published in the binomen *Scarabaeus foetidus*;
- (3) to place on the Official Index of Rejected and Invalid Specific Names in Zoology the name *scybalarius* Fabricius, 1781, as published in the binomen *Scarabaeus scybalarius* and as suppressed in (1)(a) above.

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